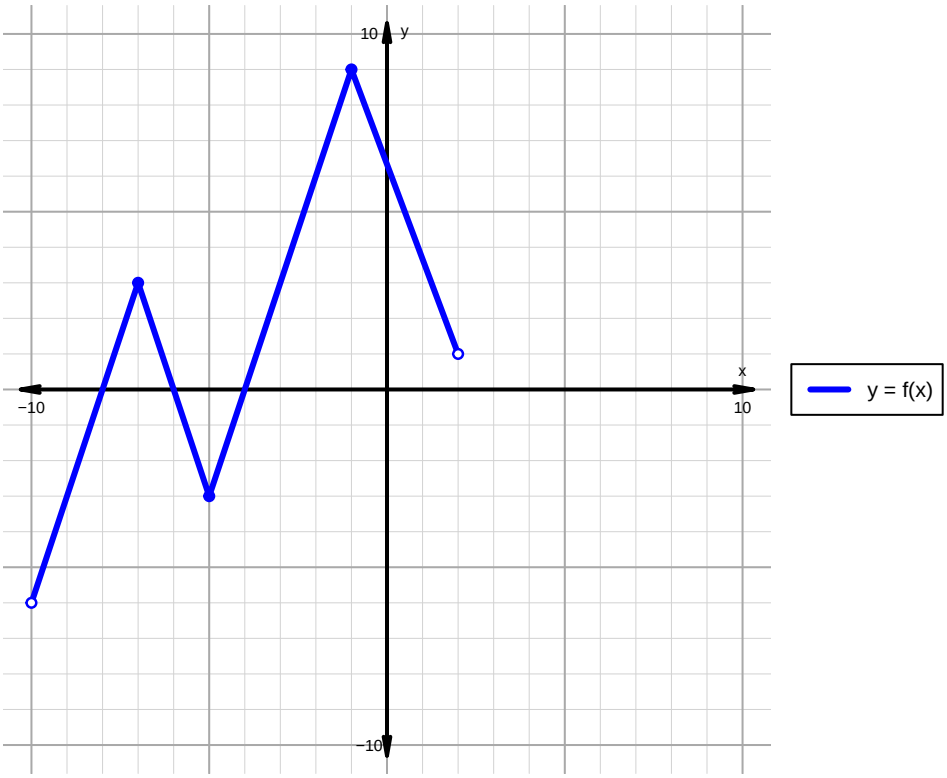
Name: Date:

Intervals, Transformations, and Slope Solution (version 7)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-6) \cup (-4,2)$
Negative	$(-10,-8) \cup (-6,-4)$
Increasing	$(-10,-7) \cup (-5,-1)$
Decreasing	$(-7,-5) \cup (-1,2)$
Domain	$(-10,2)$
Range	$(-6,9)$

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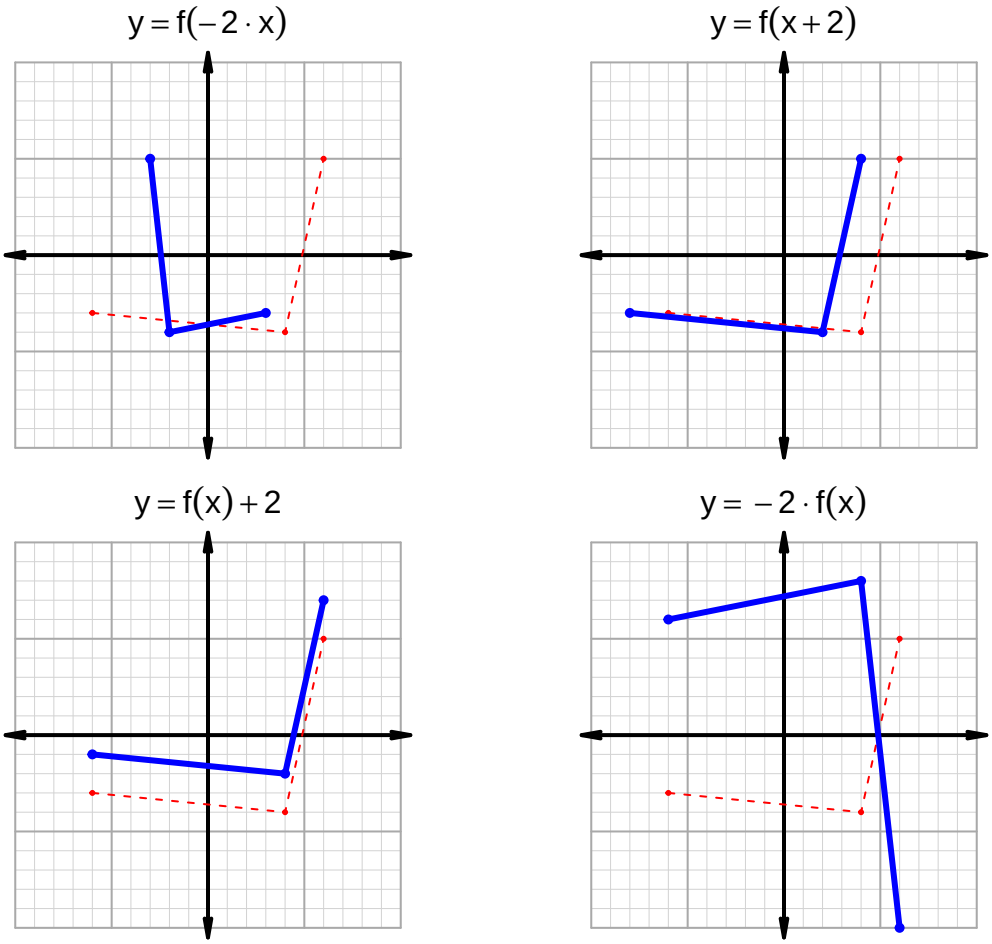
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 66$ and $x_2 = 81$. Express your answer as a reduced fraction.

x	$g(x)$
2	66
23	81
66	23
81	2

$\frac{f(81)-f(66)}{81-66} = \frac{2-23}{81-66} = \frac{-21}{15}$

The greatest common factor of -21 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{5}$$